

would be to ignore the fact that its virtues – principally, a wide knowledge of and hence feel for social science as it is actually practiced – are the very ones most lacking in that literature. An informed discussion of the nature of social science, what can be expected of it, how it can be improved and how to bring it to bear on policymaking, is badly needed. In particular, rather than yet another recounting of general metaphysical obstacles like multiple realizability, much more attention should be given instead to why social science sometimes *does* succeed and to the methodological problems that are actually pertinent 'on the ground'. Steuer breaks the silence and one can only hope that the discussion will continue.

Anna Alexandrova

University of California, San Diego

Robert Northcott

London School of Economics

DOI: 10.1017/S0266267104220314

Rationality and Freedom, by Amartya Sen. Harvard University Press 2003.

In *Rationality and Freedom*, Amartya Sen invites readers to acknowledge that human freedom is a key concept in philosophy, economics, and social science – not to mention the highest value in contemporary free-market democracies – and simultaneously to realize that it remains an elusive concept (583–585). Those familiar with Sen's bibliography will be grateful to have a selection of his writings tailored to discuss his core interests in social choice, justice, and rationality. His text is a compendium of essays, written between 1983 and the present;¹ readers interested in social choice or the foundations of decision theory will benefit from having this collection at their finger tips both for reference and as a statement of Sen's overarching philosophical position on rationality.

This review provides a synthetic overview of Sen's investigation of the interrelationship between rationality and freedom both with respect to individual and collective choice. Of course, these two aspects of decisionmaking are entangled: individuals' rational choices form the basis for collective choice, and norms of rationality are typically thought to be transpersonally binding. Still each may be considered independently as we proceed to assess Sen's volume.

¹ Formerly unpublished material includes the introductory essay "Rationality and freedom" (3–64); "Non-binary choice and preference" (245–58); "Opportunities and freedoms" (583–622); "Processes, liberty and rights" (623–58); and "Freedom and the evaluation of opportunity" (659–712).

Sen has consistently contributed to expanding the boundaries of rational decision theory, famously claiming that were individuals strictly to uphold the narrow axioms of conventional rational choice, they could be described best as "rational fools." This is because a rational agent regarded as either the prototypical *homo economicus*, or the stickler for consistency criteria independent of decision context, is bound to be a "social moron".² Sen's claim is historically and philosophically significant insofar as marginalist economists' economic man, who equalized the marginal utility of each last dollar spent on every good, acted to maximize utility in accordance with an objective function analogous to the principle of least action in physics. Sen finds the related ideas of unconscious optimization, and that an individual's life goals can be charted in a single overarching utility function, to be untenable (158–61; 225–8). Furthermore, Sen holds the idea of disembodied consistency criteria as defining a rational choice to be insufficient because in his view the axioms of rationality can only be properly defined in relationship to the specific context of choice (126–32; 225–8). In breaking new ground in his definition of rationality, Sen makes two interrelated claims certain to rankle decision theorists. These two philosophical moves are the acceptance of the standard of "maximization" instead of "optimization," and the acceptance of the context of choice as a central feature of decisionmaking.

"Optimization" requires that an agent select the most preferred, or "best," alternative; "maximization" denotes only that a choice act must not select an outcome that is *known* to be less preferred than another available outcome (746). "Maximization" does not require of rationality one overarching utility function that ranks every alternative against every other; it allows that some alternatives may be unranked *vis-à-vis* each other. It is consistent with the possibility that preference rankings may be dependent upon the "menu," that is the particular range of elements that characterize the set of alternatives available for specific choice acts. Sen's two moves serve to break the dependency of rational choice theory on the premise that agents must have a complete and well-ordered preference ranking across all possible subsets (or menus) of outcomes – that is the same ranking irrespective of the menu or context of choice. Sen further makes the anti-Humean claim that agents are able to reason about ends. Finally, he argues that choice rules themselves are subject to deliberate selection on the part of agents.

For those imbued with standard decision theory, it will not be immediately obvious how Sen defines "rationality," for the reason that his formulation violates the traditional decision-theoretic supposition that the rules of reasoning are somehow unproblematically objective and that

² Amartya Sen, *Rational fools: a critique of the behavioral foundations of economic theory*. In *Choice Welfare and Measurement*. Basil Blackwell 1982, 84–106.

they are therefore orthogonal to the subjective establishment of preference orderings. Sen upholds as fundamental to rationality the principle that "behavior is regular enough to allow it to be seen as maximizing behavior with an identifiable maximand" (30). His understanding of rationality has the following three key features: First, we can reason about what the maximand should be. Second, we can allow the ranking to vary depending on the menu and the context of choice. Third, we can permit incomplete rankings so that given any single menu, what is chosen from that menu is as good as any alternative in the menu, but is not necessarily judged to be at least as good as any alternative in the menu.

In his essays, "Internal Consistency of Choice," and "Maximization and the Act of Choice," Sen articulates his view of rational deliberation as "maximization," in distinction to the "optimization" favored by decision theorists who assume completeness of binary relations among all pairs of preferences, and inter-menu consistency of preference relations (182). Sen tells us that if a decisionmaker had complete preference orderings, with the entailed property of menu-independence, then his specification of maximization as the hallmark of rationality would not differ from the standard choice rule of optimization.³ "Maximization" contrasts with optimization in a number of crucial ways. Perhaps most prominently, it does not require the weak or strong axioms of revealed preference, which stipulate that rationality inheres in consistency of choice among outcomes regardless of the choice environment. Sen constructs his system to respond to the "need to go *beyond* the *internal* features of a choice function to understand its cogency and consistency" (124). Paul Samuelson's revealed preference approach to consumer choice, which *assumes* context independence and completeness, may conceivably work well for a family of monetarily-based choices. However, it would be insufficient to understand more complex decision situations of productive behavior, collective bargaining, political actions, or consumers' learning (125).

Sen's system can address decisionmaking in two settings that standard expected utility theory is incapable of making sense of: the case in which information is lacking to give the actor a clearly defined optimal choice, and the case in which an appropriate choice hinges specifically on the environment of choice. In the first case, a set of preferences necessarily has an incomplete ordering because, either due to a transitory lack of knowledge or an assertive inability to make a comparative judgment, an agent must make a decision without having a recognizable "best"

³ To be specific, Sen presents the theorem that maximization is equivalent to optimization if either the preference ranking is complete, or the preference ranking is transitive and there is an optimal choice:

" $B(S, R) = M(S, R)$ if either of the two following conditions holds: (I) R is complete, or (II) R is transitive and $B(S, R)$ is nonempty" (183).

alternative. Such is the case, for example, for the donkey that, choosing between two heaps of hay, could become paralyzed either because of indifference between the two stacks, or more significantly because of a lack of knowledge of which is preferable. Sen asserts that in this decision example, maximization is superior to optimization because "maximization will save your life" from paralyzing indecision arising from indifference, and "only an ass will wait for optimization" dependent upon complete information (184, 220–31).

As important as the decision criterion of maximization is to encompassing a choice situation characterized by a lack of knowledge, its more momentous aspect is to be able to encompass the menu-dependent quality that Sen argues is pertinent to many choice acts (168). The context of choice can be characterized by a number of important features that standard decision theory does not adequately address. Having a particular set of choices may in and of itself be significant to a chooser. As well, an outcome selected freely from a fuller set of choices may be less preferred when constrained by external circumstances. For example, a person who chooses to fast for political reasons when given the option of eating well may not necessarily refuse food if no political or moral gesture could be made because the only option is being half-starved. Lastly, information about a particular choice may be conveyed as a function of the particular set of choices among which the agent must choose. A person may decide to have tea with a friend $\{x\}$ given the choice between $\{x\}$ and the alternative of not going $\{y\}$, but spurn the tea-taking alternative if the friend's offer of a third alternative, such as smoking marijuana at home $\{z\}$, makes him reassess the nature of the friend or his home. This structurally not atypical decision scenario stipulates the following pair of menu-dependent choices forbidden in standard decision theory. Given a choice function $C(S)$ (that specifies for any feasible non-empty set S of choices, a non-empty subset $C(S)$ referred to as the choice set of S), in Sen's formal decision theory it is possible that:

$$\begin{aligned} \{x\} &= C(\{x, y\}), \\ \{y\} &= C(\{x, y, z\}) \quad (129). \end{aligned}$$

Sen argues that these various considerations of menu-dependent choice cannot be resolved by a more encompassing set of preferences that exhibit the prized properties of binary choice and inter-menu consistency. Nor is it the case, as some have argued, that freedom of choice in these context-bounded situations is non-existent for the reason that the chooser has no say over what menu is offered (170–1). For Sen, maximization is superior to optimization because, since it does not require completeness, it can accommodate these irreducible features of decision-making. Rationality, then, acquires an element of free-play because the

agent herself determines what features of a choice environment are relevant, and which in turn structures her hierarchy of preferences and her resulting choice. In addition, as in cases of responsibility for others, the decision-maker has leeway in deciding what decision rules to apply, such as the Savage independence axiom (175–81; 232–9). Thus, it is accurate to conclude that Sen extends the concept of methodological individualism from the subjective acknowledgment of personal preference orderings to the process of identifying the relevant parameters characterizing a choice problem, and establishing which decision rules to apply. In so doing, an “authoritarian” element inherent in assuming *a priori*, as it were, choice axioms dependent on complete and transitive preferences, is removed (6).

Shifting gears to social choice, the complex of issues at the heart of defining individuals’ freedom within society has been at the center of Sen’s research since his early formulation of the “Paretian Liberal paradox”.⁴ This paradox pits an individual’s right to self-determine ends in direct conflict with the minimalist Paretian criterion for identifying socially superior outcomes. Before proceeding to discuss Sen’s more recent contributions to the discussion of collective rationality and rights, it is worth briefly reflecting on the early history of the dialogue between Robert Nozick and Sen.

Human freedom has been a key theme for western society from the time of the Enlightenment to the present, and the Cold War’s following hard on the heels of WWII only served to intensify its centrality. As the social choice tradition crystallized in Kenneth Arrow’s *Social Choice and Individual Values*, freedom was in some sense built into the theory in the form of methodological individualism (see 300–24). This commitment to the individual as the sole arbiter of social value was entrenched in the assumptions of Arrow’s impossibility theorem which accepts that individuals may express any transitive preference ordering, requires that individuals jointly be sovereign over the social choice, prohibits dictatorship, and rules out interpersonal comparisons of the intensity of preferences (329; 591). In this fashion, the methodological assumption that individual choice serves as the foundation of social choice gives primacy to individual preferences uncensored by an external authority; Arrow’s conditions for collectively rational decisionmaking rest on nothing but individual choice. We have seen how Sen extends this personal prerogative of choice to encompass contextual factors structuring a decision, and the rules of reasoning themselves (233).

Within social choice theory, methodological individualism, as expressed in the admissibility of any (transitive) individual ordering over social states, is the starting point for deriving a legitimate collective

⁴ Amartya Sen “The impossibility of a Paretian liberal”. *Journal of Political Economy* 78, 1 (1970), 152–57.

expression of wellbeing. It is to this location of individual freedom within a society comprised of others that Sen turns in order to further explore the interrelationship of rationality and freedom. Within the context of social choice, the individual has no immediate say over collective outcomes; hence, freedom takes on the purely subjective form of expressing one's values but not necessarily securing them in the resulting social outcome. This impasse between subjective preference orderings and collective choice, of course, provided the grist for Sen's Paretian Liberal paradox. Capitalizing on the concept of group decisiveness in social choice theory, Sen shows that a collective decision respecting the Pareto condition of unanimous consent may directly conflict with an individual's right to substantively determine an outcome directly affecting only herself (592–3). The critical insight is that the social choice protocol of respecting individuals' subjective preferences in achieving a collective result directly sanctioned by methodological individualism may still violate the classic liberal value of permitting individuals the freedom to substantively determine outcomes in a personal sphere of action (381–407).

In *Anarchy, State and Utopia*, Nozick's insistence on consequence-independent individual rights was exacting even if moderated by the admission that catastrophic moral outcomes require consideration (638).⁵ In return, Sen showed that an all-out commitment to rights may at times lead to catastrophic moral consequences, as in the case of famines wherein individuals cease to be able to purchase food, not for the lack of such a right but due to the lack of an entitlement (86–90; 512). Sen's empirically based rejoinder to Nozick set the stage for accepting the need to evaluate social outcomes in addition to upholding a general emphasis on individuals' rights (639). Upon this platform, Sen concluded that neither a rights-based, nor a social welfarist based approach to social justice, can stand on its own; the two evaluative approaches must be conjoined to build an adequate theory of justice. Sen points out that even the most process-oriented approaches to justice, such as public choice (639–42), Adam Smith's political economy, and Kant's practical reason, still at the end of the day accept the burden of demonstrating that overall social well-being emerges (278–81; 290). Nozick's concession that catastrophic social outcomes must be evaluated is particularly important today because libertarian arguments for free markets tend to rest entirely on process without due attention to social consequences (511). However, it is in adjudicating a delicate balance between seemingly opposed individual rights and social welfare, that the philosophical challenge is at its greatest. It is to this effort that Sen addresses his essays on freedom and collective rationality (e.g., 632–6).

⁵ Robert Nozick, *Anarchy, State and Utopia*. Basil Blackwell 1974.

Rights and social outcomes appear to be contrary concerns because rights are defined for individual agents whereas outcomes within social choice theory are defined for groups of agents (due to the interdependence of agents' choices). Furthermore, rights pertain to the process of determining one's ends whereas social outcomes are evaluated in terms of consequences. If the additional concerns of positive and negative liberty are superimposed upon the discussion of rights and social outcomes, the philosophical territory increases in complexity (508–9; 586–7). It then becomes necessary to differentiate between a sphere for private determination of ends, and a sphere in which subjective preferences may be expressed regardless of the resulting social outcome. In other words, within the rights-friendly, negative liberty version of justice, freedom within one's personal sphere of action has substantive hold insofar as within this private arena an individual has the right to make his choice prevail. Within the context of positive liberty, it is more difficult to delimit a sphere of action over which an agent has the purview to determine that an outcome prevail.

Sen advances four major arguments in mediating between a rights-based and social outcome based approach to justice.⁶ One is to problematize the ability of the rights-based approach to delimit tidy boundaries around spheres of private action. This is straightforward in the cases of public epidemiology and public information dissemination, both of which enhance individuals' abilities to live and choose freely but require a collective effort (644–6). This difficulty is also obvious in examining the most modest claims of a minimum private sphere for liberty, even in a case so trivial as singing (410–14; 421–6). A second move is to remind readers that much progress has been made in evaluating social outcomes since the time Arrow proposed his original impossibility theorem (65–118). In a related feature to this move, Sen reminds us of his earlier argument that individuals are able to reason about ends, and that therefore public discussion may provide a means to move toward collective agreement about ends as individuals' preferences are potentially altered through the process of debate (286; 290; 587–90). Sen assures us that valid social evaluations can be drawn, even given the incompleteness of individuals' preference orderings (611). Sen argues, third, that game theory is an invaluable tool for understanding the consequences of individuals' exercise of rights, but that ultimately a social judgment over the benefits of this joint exercise is inescapable (311–18; 428–31; 439–60). Fourth, Sen refocuses the discussion from the welfarist notion of individual wellbeing

⁶ "The possibility of choice choices" (65–118); "Individual preference as the basis of social choice" (300–24); "Minimal liberty" (408–38); "Rights: formulation and consequences" (439–60); "Markets and freedoms" (501–30); "Opportunities and freedoms" (583–622); "Processes, liberty and rights" (623–58); and "Freedom and the evaluation of opportunity" (659–95).

to the terminology of opportunity. For Sen it is key that "more freedom gives us more *opportunity* to achieve those things that we value, and have reason to value" (585).

Given these four sets of arguments reconciling rights with ends achieved, the final set focusing on opportunities brings us back to Sen's signature contribution to social choice theory, a contribution that is enriched by formerly unpublished essays. In the form of his "capabilities" approach, Sen makes freedom central to any evaluation of social ends in a quantifiable manner of relevance to a public policy analyst, or even a World Bank official (e.g., 658–95). Sen incorporates freedom into social choice theory by assessing individuals' opportunity sets. Preferences over outcomes, such as commodity bundles, miss what is of key importance for Sen: that individuals are deeply concerned with what substantive opportunities are available to them. Thus far, within economic literature the technical language to differentiate between an agent's access to concrete achievements instead of to merely goods has been less developed. To address this deficiency, in granting that the familiar welfarist language of "individual wellbeing" is discredited either for relying on inter-personal comparisons of utility or for proposing objective needs, Sen reconstructs the basis of social choice on human functioning and opportunity sets. That is, the opportunity set an individual is presented with is as important to evaluating his freedom as is his autonomy in decisionmaking and freedom from external interference. Sen argues that individuals with physical disabilities are doubly hampered if they (1) have low incomes because of disabilities, and (2) then can function less ably than a healthy individual with the same income because of the cost of medications or prosthetics (512–27).

In arguing that freedom consists in the ability to realize self-determined ends, Sen incorporates a substantive claim into his analysis of freedom: An agent's freedom is directly linked to what opportunity he has to realize his ends. Of course, this substantive component will alarm negative liberty theorists who uphold the principle of non-injury while eschewing that of mandatory beneficence. Sen extends the market-friendly concept of Pareto efficiency characterizing competitive equilibrium, assessed in terms of individuals' preference fulfillment, to weak Pareto efficiency of competitive equilibrium, evaluated in terms of opportunity-freedom; he establishes that "any competitive market equilibrium is weakly efficient in opportunity-freedom (in a standard commodity space)" (522). He suggests, without direct articulation, that due to the doubly-hampering effect of lack of income upon goal realization if combined with lack of functioning, a slight diminishment in a well-endowed, healthy individual's command over commodity bundles (a) may negligibly affect her opportunity-freedom, and (b) may provide the basis for significantly increasing another individual's opportunity-freedom. In *Rationality and*

Freedom, Sen's goal is not to assign responsibility for this type of beneficent redistribution so much as it is to specify that "the challenge the market systems have to face must relate to problems in equity of distribution of substantive freedoms," and not simply distribution of commodity bundles (526).

Not only do the essays in *Rationality and Freedom* provide a synthesis of the state of the art in social choice theory and axiomatic decision theory, but they are a tremendous aid in understanding Sen's myriad, subtle and profound contributions in these fields. This review has not done justice to the reach of material presented in this text; essays on "Non-binary choice and preference," "Positional objectivity," "On the Darwinian view of progress," on "Environmental evaluation," and "The discipline of cost-benefit analysis" have not been mentioned. I eagerly await *Freedom and Justice*, the companion volume, to which Sen alludes in his essay "Processes, liberty and rights" (623–58) for further insights into his ambitious project of clarifying and exploring the complex interrelationships between human rationality, individual freedom, and social justice.

S. M. Amadae

New School University

DOI: 10.1017/S0266267104230310

Learning and Coordination: Inductive Deliberation, Equilibrium, and Convention, by Peter Vanderschraaf. Routledge 2001, xx + 222 pages.

Peter Vanderschraaf's book is about the problem of how people manage to coordinate their actions. The simplest example is the well-known one of choosing a side of the road to drive on. When two cars approach each other they can safely pass each other either by each choosing the right or by each choosing the left side of the road, while they will collide if one car chooses right and the other left, or vice versa. When they both choose left or right, their actions are coordinated. Car drivers could achieve such coordination case by case, by stopping their cars, taking counsel with one another and agreeing on a side they will each choose. However, such case-by-case coordination would make social life a tedious business and probably a dangerous business as well. In real life we manage to achieve coordination through the establishment of conventions. Car drivers use the right side of the road as a rule. Or the left sides, of course, since it is exactly a characteristic of such situations that there are several possibilities that are on a par as regards people's preferences. Settling on an outcome involves a break of symmetry.